# Scope & Sequence

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| Course Name: Horticultural Science **TSDS PEIMS Code:** 13002000 | | | **Course Credit:** 1.0  **Course Requirements:** grades 10-12.  **Prerequisites:** None. |
| **Course Description:** Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production. | | | |
| **NOTE:** This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered. | | | |
| **Total Number of Periods**  **Total Number of Minutes**  **Total Number of Hours** | 175 periods  7,875 minutes  131.25 hours\* | \*Schedule calculations based on 175/180 calendar days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, etc. | |
| **Unit Number, Title, and Brief Description** | **# of Class Periods\***  (assumes 45-minute periods)  Total Minutes per Unit | **TEKS Covered**  **130.23 (c) Knowledge and skills** | |
| **Unit 1: Career Exploration in the Agricultural/Horticulture Industry**  Students will learn about careers in various areas in the horticulture industry, the personal skills needed to obtain one of these jobs and how skills needed for success have changed over time. Students will understand the importance of time management, the importance of effective communication and appropriate interaction in the workplace as well as understand the importance of a first impression. This unit will culminate in an experiential activity designed to allow the students to create a resume and cover letter  with a job description and to participate in a mock job interview with a panel of possible employees. | 5 periods  225 minutes | (1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:  (A) identify career development and entrepreneurship opportunities in the field of horticulture;  (B) apply competencies related to resources, information, interpersonal skills, and systems of operation in horticulture;  (C) demonstrate knowledge of personal and occupational safety practices in the workplace;  (D) identify employer expectations and appropriate work habits; and  (E) demonstrate characteristics of good citizenship, including advocacy, stewardship, and community leadership. | |
| **Unit 2: Supervised Agricultural Experience (SAE)**    This unit, students will be able to define and describe Supervised Agricultural Experience (SAE) programs. Students will be able to explain how SAE’s are a vital part of the Agriculture Education Program by participating in local CTSO activities such as FFA as well as engage in a required SAE project. Students will be able to identify key partners in developing a successful SAE. Through involvement in an SAE, students will learn expected workplace behavior, develop specific skills within the industry, and will be given the opportunity to apply academic and occupational skills in the workplace. | 10 periods  450 minutes | (2) The student develops a supervised agriculture experience program. The student is expected to:  (A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;  (B) apply proper record-keeping skills as they relate to the supervised agriculture experience;  (C) participate in youth leadership opportunities to create a well-rounded experience program; and  (D) produce and participate in a local program of activities using a strategic planning process. | |
| **Unit 3: Plant Physiology**    Students will examine plant vegetative properties to identify and describe their various functions. Students will be able to determine the differences between female and male plants. Additionally, students will germinate seeds and learn the differences between monocots and dicots. As a culminating activity, the students will germinate monocot and dicot seeds as well as propagate plants using cuttings. | 25 periods  1,125 minutes | (4) The student identifies structures and physiological processes used in plant production. The student is expected to:  (A) examine unique plant properties to identify and describe functional differences in plant structures, including roots, stems, flowers, leaves, and fruit;  (B) differentiate between monocots and dicots and male and female plants;  (C) germinate seeds and transplant seedlings; and  (D) demonstrate asexual propagation techniques. | |
| **Unit 4: Horticulture Management**  This unit, students will discuss the importance of plants and their utilization. It is important for the students to be able to classify and describe plants using various distinguishing features such as: characteristics, propagation techniques, and flowers. Students will gain a better understanding of proper propagation and pruning techniques. Additionally, students will be introduced to greenhouse management and gain a better understanding of the factors involved in horticulture production management. Students will engage in various activities in the greenhouse to show proficiency. | 30 periods  1,350 minutes | (3) The student develops technical skills associated with the management and production of horticultural plants. The student is expected to:  (A) classify horticultural plants based on physiology for taxonomic and other classifications;  (B) manage the horticultural production environment;  (C) propagate and grow horticultural plants;  (G) demonstrate proper pruning techniques. | |
| **Unit 5: Principles and Elements of Horticulture Design**  This unit focuses on how bedding sites and materials are determined when designing the landscape. They will know the plants and materials needed for a specific size and site. The students will gain a better understanding of how to plan and use nursery plants for specific purposes. As a culminating activity for this unit, students will be able to explain calculations needed to establish a planting site as well as materials needed. The students will also be able to demonstrate how to design and establish a site. | 30 periods  1,350 minutes | (3) The student develops technical skills associated with the management and production of horticultural plants. The student is expected to:  (D) create a design using plants that demonstrates an application of design elements and principles;  (E) design and establish landscapes | |
| **Unit 6: Fruit, Nut and Vegetable Production**  This unit students will recognize several types of fruits, nuts and vegetables as well as how those items are produced, prepared and marketed. Marketing techniques and processes will be discussed. How fruit, nuts and vegetables can be preserved, packed, transported and stored. At the end of the unit, students will research different packaging techniques which are used for vegetables, fruits or nuts. Students must gather information on at least three packaging techniques and detail why they are used. Students should share their information with the class. | 25 periods  1,125 minutes | (3) The student develops technical skills associated with the management and production of horticultural plants. The student is expected to:  (F) describe the processes of fruit, nut, and vegetable production. | |
| **Unit 7: Pests and Pesticide Safety**  Students will learn about different pests and how these pests relate to horticulture. They will identify common insects, their external structure, their life cycles, and types of insect damage. Students will also learn about weeds, viruses, fungal and bacterial diseases. Students will learn about Integrated Pest Management (IPM) techniques as well as pesticide safety. At the completion of the unit, students will research and explain the mandatory parts of a pesticide label. They will identify the part of the label and describe its purpose and importance. The students will share their findings with the class. | 25 periods  1,125 minutes | (5) The student manages and controls common pests of horticultural plants. The student is expected to:  (A) identify common horticultural pests and pathogens;  (B) demonstrate safe practices in selecting, applying, storing, and disposing of chemicals; and  (C) explain parts of a pesticide label. | |
| **Unit 8: Marketing and Management in Horticulture**  Students will be able to explain and demonstrate basic tools as well as power tools and equipment used in daily landscape operations. Additionally, the students will also be able to demonstrate safety practices used in landscape operations. They will be able to name proper storage procedures for tools as well. Students will explore options and opportunities in the horticulture industry.  Students will be able to describe and define business concepts in the horticulture industry and explain what can be done to make a business successful. | 25 periods  1,125 minutes | (6) The student demonstrates marketing and management skills used in the operation of horticultural businesses. The student is expected to:  (A) identify and maintain hand and power tools and equipment;  (B) select appropriate tools and equipment;  (C) demonstrate safe use of tools and equipment;  (D) identify options and opportunities for business ownership; and  (E) analyze the role of small business in free enterprise. | |